

ABSTRACT OF THE DISCLOSURE

A ceramic part having a surface exposed to the interior space, the surface having been shaped and plasma conditioned to reduce particles thereon by contacting the shaped surface with a high intensity plasma. The ceramic part can be made by sintering or machining a chemically deposited material. During processing of semiconductor substrates, particle contamination can be minimized by the ceramic part as a result of the plasma conditioning treatment. The ceramic part can be made of various materials such as alumina, silicon dioxide, quartz, carbon, silicon, silicon carbide, silicon nitride, boron nitride, boron carbide, aluminum nitride or titanium carbide. The ceramic part can be various parts of a vacuum processing chamber such as a liner within a sidewall of the processing chamber, a gas distribution plate supplying the process gas to the processing chamber, a baffle plate of a showerhead assembly, a wafer passage insert, a focus ring surrounding the substrate, an edge ring surrounding an electrode, a plasma screen and/or a window.